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Appl. No. 09/988,241 Appeal Brief

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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For:

MULTICAST SESSION HANDOVER

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## APPEAL BRIEF

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Sir:

This Appeal Brief is submitted in accordance with 37 C.F.R. § 41.37 in support of Appellants' January 6, 2006, Notice of Appeal and Appellants' January 6, 2006, Pre-Appeal Brief Request for Review. Appeal is taken from the Final Office Action mailed October 18, 2005, and the Notice of Panel Decision from Pre-Appeal Brief Review mailed July 17, 2006. Please charge any necessary fees in connection with this Appeal Brief to our Deposit Account No. 19-0733.

### I. REAL PARTY IN INTEREST

37 C.F.R. § 41.37(c)(1)(i)

The owner of this application, and the real party in interest, is NOKIA Corporation.

## II. RELATED APPEALS AND INTERFERENCES

37 C.F.R. § 41.37(c)(1)(ii)

There are no related appeals and interferences.

### III. STATUS OF CLAIMS

37 C.F.R. § 41.37(c)(1)(iii)

Claims 1-47 are rejected. Appellants hereby appeal the rejection of claims 1-47.

### IV. STATUS OF AMENDMENTS

37 C.F.R. § 41.37(c)(1)(iv)

No amendment has been filed subsequent to a final rejection in this case.

### V. SUMMARY OF CLAIMED SUBJECT MATTER

37 C.F.R. § 41.37(c)(1)(v)

In making reference herein to various portions of the specification and drawings in order to explain the claimed invention, Appellant does not intend to limit the claims; all references to the specification and drawings are illustrative unless otherwise explicitly stated. The illustrations and explanations below are primarily directed to the independent claims, claims 1, 9, 34, and 47.

The invention relates generally to wireless data network systems. More precisely the invention relates to performing multicast session handovers from one cell to another in a wireless system. *Specification*, p. 1, lines 3-5 (para. [01]).

Claimed embodiments of the invention provide a method (claims 1, 9, 34, and 47), mobile terminal (claims 12 and 37), and computer readable medium (claim 23) that each performs multicast session handover in a wireless network. Generally speaking, a mobile terminal receives a multicast session announcement over an announcement channel in a first cell, where the multicast session announcement includes multicast session information for the first cell as well as a second cell. That is, the multicast session announcement received by a mobile terminal contains session information for multiple cells, which is unlike prior art systems whereby each cell only broadcast its own session information. The mobile terminal tunes to a multicast session in the first cell using the multicast session information provided in the multicast session announcement. When a multicast session metric condition is met, such as a signal strength fading from a usable signal strength, the mobile terminal tunes to the multicast session signal broadcast by the second cell using the multicast session information provided in the

multicast session announcement received from the first cell. *Specification*, p. 2, lines 9-18 (para. [06]).

In the various embodiments of independent claims 1, 9, 12, 23, 34, 37, and 47, a mobile terminal (e.g., mobile telephone, PDA) tunes to a logical announcement channel in a digital broadcast data bearer (first cell) in a wireless network (e.g., the cell HelsinkiAirportLounge of type WLAN). *Specification*, p. 3, lines 11-20 (para. [15]); p. 7, lines 6-11 (para. [28]); Figure 1. The mobile terminal receives one or more types of administrative announcements containing session, mapping, topology, and link-level parameter information about multicast sessions in the first cell and neighboring cells, such as cells within the same network type or cells of different access types (e.g., DVB-T and GPRS) that, optionally, cover the same geographic area. *Specification*, p. 3, line 21 - p. 4, line 6 (para. [16]), p. 4, line 18 - p. 5, line 18 (paras. [19]-[21]). That is, the administrative announcements may include link-level access parameter information for the first cell and other cells in which the sessions are available. *Specification*, p. 7, lines 6-11 (para. [28]). Link-level information may include physical parameters of each cell (frequency, MAC address, timeslots, etc.), as well as descriptions of logical session mappings that mobile terminals may use to connect to the sessions in each cell. *Specification*, p. 4, line 27 - p. 5, line 10 (para. [20]).

The mobile terminal tunes to a session in the first cell using the link-level access parameters for the first cell and starts receiving the multicast broadcast. *Specification*, p. 3, lines 11-20 (para. [15]). As the mobile terminal moves beyond the edge of the first cell's coverage area, the first cell's reception may fade such that mobile terminal can no longer receive broadcasts from the first cell. Thus, the mobile terminal may switch reception to a new cell's multicast session in order to continue receiving the broadcast. As reception of the current bearer signal diminishes (e.g., as a result of errors, fadeout, malfunction, etc.) the mobile terminal may use the gathered logical mappings and link-level access parameters to select a new physical or logical cell (e.g., the second cell), from which to receive the multicast. After selecting a new physical or logical cell the mobile terminal tunes to the new cell and continues to receive multicast information for the previous session, thus completing the handover. *Specification*, p. 3, line 21 – p. 4, line 6 (para. [16]); p. 8, lines 14-25 (para. [32]). The mobile terminal uses the information received from the first cell to tune to the channel in the second cell.

# VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

37 C.F.R. § 41.37(c)(1)(vi)

The ground(s) of rejection to be reviewed on appeal include(s):

Claims 1-4, 9, 10, 12-15, 18, 19, 23-26, 29, 30, 34, 37-40, 43, and 47 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Leung* (U.S. Publ. Appl. 2002/0142757).

Claims 5, 6, 11, 20-22, 31-33, and 44-46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Leung* in view of *McCormick* (U.S. Pat. No. 6,519,455).

Claims 7, 16, 27, 35, and 41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Leung* in view of Examiner's Official Notice.

Claims 8, 17, 28, 36, and 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Leung* in view of *Das et al.* (U.S. Publ. Appl. 2001/0036834, hereinafter *Das*).

### VII. ARGUMENT

37 C.F.R. § 41.37(c)(1)(vii)

# 1. Claims 1-4, 9, 10, 12-15, 18, 19, 23-26, 29, 30, 34, 37-40, 43, and 47 are patentably distinct from *Leon*.

The Final Office Action mailed October 18, 2005 (hereinafter referred to as Office Action), rejects claims 1-4, 9, 10, 12-15, 18, 19, 23-26, 29, 30, 34, 37-40, 43, and 47 under 35 U.S.C. § 102(e) as having been anticipated by Leung. This rejection is improper.

Pending claim 1 recites, inter alia:

- in a first cell, receiving from a base station corresponding to the first cell, a broadcast message communicating multicast session information for a plurality of cells comprising the first cell and a second cell;
- (ii) tuning to a multicast session in the first cell using the received multicast session information;
- (iii) when a predetermined condition occurs, tuning to the multicast session in the second cell using the received multicast session information.

In order to reject a claim as anticipated under 35 U.S.C. §102, a single prior art reference must teach every aspect of the claimed invention. MPEP § 706.02. However, *Leung* does not teach

or suggest the recited features of claim 1. Indeed, *Leung* only goes so far as to describe a conventional prior art system upon which aspects of the present invention improves.

For example, the Office Action cites paragraphs 58-90 and 50 of *Leung* as describing the above-recited steps. Paragraph 58 of *Leung*, however, merely describes the *existence* of high-speed multimedia broadcasting service (multicasting), which Appellant does not dispute is known. Indeed, the Office Action misinterpreted Appellant's arguments by responding that because *Leung* describes multicasting by all cells, the first cell is therefore included in "all cells" and broadcasts multicast information. See Office Action, p 2, item 1, second full paragraph. This is irrelevant because *Leung* does not describe, teach, or otherwise suggest "in a first cell, receiving from a base station corresponding to the first cell, a broadcast message communicating multicast session information for a plurality of cells comprising the first cell and a second cell" as claimed. Stated another way, a single base station ("a base station") broadcasts multicast session information for a plurality of cells. *Leung* merely describes a conventional method whereby each cell broadcasts only its own multicast session information.

Similarly, Paragraph 59 of *Leung*, which is reproduced below, describes mobile stations' subscribing to a content server to learn broadcast schedules, but does not indicate that the content server even provides multicast session information, much less for a plurality of cells. Paragraph 59 further describes a conventional method of base stations providing parameters in overhead messages, but again does not indicate that such parameters are sent by a base station in a first cell for a *plurality* of cells comprising the first cell and a second cell, as claimed. That is, while a base station may provide its own parameters in an overhead message, *Leung* does not teach or suggest anywhere that this overhead message also contains information for any other cells.

> [0059] According to the exemplary embodiment, a service provider is referred to as a Content Server (CS), wherein the CS advertises the availability of such high-speed broadcast service to the system users. Any user desiring to receive the HSBS service may subscribe with the CS. The subscriber is then able to scan the broadcast service schedule in a variety of ways that may be provided by the CS. For example, the broadcast content may be communicated through advertisements, Short Management System (SMS) messages, Wireless Application Protocol (WAP), and/or some other means generally consistent with and convenient for mobile wireless communications. Mobile users are referred to as Mobile Stations (MSs). Base Stations (BSs) transmit HSBS related parameters in overhead messages, such as those transmitted on channels and/or frequencies designated for control and information, i.e., non-payload messages. Payload refers to the information content of the transmission, wherein for a irroadcast session the payload is the broadcast content, i.e.,

> the video program, etc. When a broadcast service subscriber desires to receive a broadcast session, i.e., a particular broadcast scheduled program, the MS reads the overhead messages and learns the appropriate configurations. The MS then times to the frequency containing the HSBS channel, and receives the broadcast service content.

Leon: Paragraph 59

Paragraph 50 does not cure the defect of the previous paragraphs. Indeed, paragraph 50 actually recites that mobile terminals may receive multiple transmissions from *multiple* base stations, not multicast session information for a plurality of cells comprising the first cell and a second cell, from a base station corresponding to the first cell, as claimed. That is, while a mobile terminal in *Leung* may receive transmissions from multiple base stations, the information received from each base station relates only to its own broadcasts and not for other base stations.

Appellant has likewise reviewed the remainder of *Leung* and finds no teaching or suggestion of the features of claim 1 in *Leung*. The closest portion of *Leung* appears to be the use of broadcast session parameter messages (BSPM) as described with respect to Figure 16 in *Leung*. However, BSPM messages still only provide information corresponding to a single base station, as illustrated at paragraphs 83-84 in *Leung*.

Thus, *Leung* does not anticipate claim 1 because *Leung* fails to describe, in a first cell, receiving from a base station corresponding to the first cell, a broadcast message communicating multicast session information for a plurality of cells comprising the first cell and a second cell,

and thereby also fails to describe the remaining steps of claim 1. The rejection of claim 1 is therefore improper, and should be withdrawn.

The rejection of dependent claims 2-8 and 10-11 is also improper for at least the same reasons as claim 1. In addition, with respect to claim 2, Leung does not describe that multicast session information comprises a session identifier and a list of cells in which the multicast session is available. Indeed, as Leung does not describe the provisioning of multicast session information for a plurality of cells, such information cannot, by definition, include a session identifier and a list of cells in which the multicast session is available, as claimed.

Independent claim 9 recites at least similar features as claim 1, and the rejection of claim 9 is therefore improper for similar reasons. In addition, *Leung* does not describe, teach, or even suggest the use of link-level access parameters in multicast session information, as *Leung* does not provide multicast session information for a plurality of cells, as discussed above.

Independent claim 12 claims a mobile terminal storing computer readable instructions that perform a method with similar steps as claim 1. The rejection of claim 12 is thus improper for similar reasons as claim 1, and rejection of dependent claims 13-22 are therefore improper as well.

Independent claim 23 claims a computer readable medium storing computer readable instructions that perform a method with similar steps as claim 1. The rejection of claim 23 is thus improper for similar reasons as claim 1, and rejection of dependent claims 24-33 are therefore improper as well.

Independent claim 34 recites, *inter alia*, "receiving a session announcement corresponding to a multicast session, the session announcement comprising information that maps link-level access parameters in each of a plurality of cells to the multicast session." As discussed above, *Leung* does not send session announcements, much less session announcements having information for link-level access parameters for multiple cells. Thus, rejection of claim 34 is improper.

Independent claim 37 recites at least similar allowable features as claim 1, and is therefore also not anticipated by *Leung*. Rejection of dependent claims 38-46 are improper for at least the same reasons.

Independent claim 47 recites, *inter alia*, "transmitting from a base station corresponding to the first cell, a broadcast message communicating multicast session information for a plurality

of cells comprising the first cell and the second cell." Because, as discussed above, *Leung* does not describe such a feature, *Leung* does not anticipate claim 47.

# 2. Claims 5, 6, 11, 20-22, 31-33, and 44-46 are patentably distinct from Leon in view of McCormick.

Claims 5, 6, 11, 20-22, 31-33, and 44-46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Leung* in view of *McCormick*. However, even assuming the references are properly combinable, the combination does not teach or suggest all the features of the above claims, because *McCormick* supplements only as to the additional features recited in the dependent claims. *McCormick* does not cure the above-recited deficiencies of *Leung*. Thus, the rejection of the aforementioned claims is improper.

# 3. Claims 7, 16, 27, 35, and 41 are patentably distinct from *Leon* in view of Examiner's Official Notice.

Claims 7, 16, 27, 35, and 41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Leung*in view of Examiner's *Official Notice*. Appellant respectfully traverses this rejection for at least the same reasons as stated above; namely, that the Official Notice supplements only as to the additional features recited in the aforementioned claims and does not cure the above-recited deficiencies of *Leung*.

### 4. Claims 8, 17, 28, 36, and 42 are patentably distinct from Leon in view of Das.

Claims 8, 17, 28, 36, and 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Leung*in view of *Das*. Appellant respectfully traverses this rejection for at least the same reasons as stated above; namely, that *Das* supplements only as to the additional features recited in the aforementioned claims and does not cure the above-recited deficiencies of *Leung*.

## **CONCLUSION**

For all of the foregoing reasons, Appellants respectfully submit that the rejections of the claims referenced in section VI, above, are improper and should be reversed.

Respectfully submitted,

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## CLAIMS APPENDIX 37 C.F.R. § 41.37(c)(1)(viii)

- 1. (Previously Presented) A method for performing multicast session handover, comprising the steps of:
  - in a first cell, receiving from a base station corresponding to the first cell, a broadcast message communicating multicast session information for a plurality of cells comprising the first cell and a second cell;
  - (ii) tuning to a multicast session in the first cell using the received multicast session information;
  - (iii) when a predetermined condition occurs, tuning to the multicast session in the second cell using the received multicast session information.
- 2. (Original) The method of claim 1, wherein, in step (i), the multicast session information comprises a session identifier and a list of cells in which the multicast session is available.
- 3. (Original) The method of claim 1, wherein, in step (i), the multicast session information comprises a frequency.
- 4. (Original) The method of claim 1, wherein, in step (i), the multicast session information comprises a session title.
- (Original) The method of claim 1, wherein the predetermined condition comprises a signal strength fading.
- 6. (Original) The method of claim 1, wherein the predetermined condition comprises receiving predetermined user input.

- 7. (Original) The method of claim 1, wherein steps (ii) and (iii) comprise receiving a digital video broadcast terrestrial (DVB-T) multicast session.
- 8. (Original) The method of claim 1, wherein steps (ii) and (iii) comprise receiving a UMTS multicast session.
- 9. (Previously Presented) A method for performing multicast session handover, comprising the steps of:
  - in a first cell, receiving from a base station corresponding to the first cell, multicast session information for a plurality of cells comprising the first cell and a second cell;
  - (ii) tuning to a multicast session in the first cell using the received multicast session information;
- (iii) when a predetermined condition occurs, tuning to the multicast session in the second cell using the received multicast session information,

wherein, in step (i), the multicast session information comprises link-level access parameters corresponding to the first and second cells,

wherein steps (ii) and (iii) comprise using the link-level access parameters to tune to the multicast session in each cell.

- 10. (Original) The method of claim 1, further comprising the step of joining an IP multicast group in the first cell.
- 11. (Original) The method of claim 1, further comprising the step of periodically receiving multicast session announcements while tuned to the multicast session in the first cell.
  - 12. (Previously Presented) A mobile terminal, comprising: a processor, and

memory for storing computer readable instructions that, when executed by the processor, cause the mobile terminal to perform steps of:

- in a first cell, receiving from a base station corresponding to the first cell, a broadcast message communicating multicast session information for a plurality of cells comprising the first cell and a second cell;
- (ii) tuning to a multicast session in the first cell using the received multicast session information;
- (iii) when a predetermined condition occurs, tuning to the multicast session in the second cell using the received multicast session information.
- 13. (Original) The mobile terminal of claim 12, wherein, in step (i), the multicast session information comprises a session identifier and a list of channels in which the multicast session is available.
- 14. (Original) The mobile terminal of claim 12, wherein, in step (i), the multicast session information comprises a frequency.
- 15. (Original) The mobile terminal of claim 12, wherein, in step (i), the multicast session information comprises a session title.
- 16. (Original) The mobile terminal of claim 12, wherein steps (ii) and (iii) comprise receiving a digital video broadcast terrestrial (DVB-T) multicast session.
- 17. (Original) The mobile terminal of claim 12, wherein steps (ii) and (iii) comprise receiving a UMTS multicast session.
- 18. (Original) The mobile terminal of claim 12, wherein, in step (i), the multicast session information comprises link-level access parameters corresponding to the first and second cells, and

wherein steps (ii) and (iii) comprise using the link-level access parameters to tune to the multicast session in each cell.

- 19. (Original) The mobile terminal of claim 12, wherein the computer readable instructions further comprise the step of joining an IP multicast group in the first cell.
- 20. (Original) The mobile terminal of claim 12, wherein the computer readable instructions further comprise the step of periodically receiving multicast session announcements while tuned to the multicast session in the first cell.
- 21. (Original) The mobile terminal of claim 12, wherein in step (iii) the predetermined condition comprises a signal strength fading.
- 22. (Original) The mobile terminal of claim 12, wherein in step (iii) the predetermined condition comprises receiving predetermined user input.
- 23. (Previously Presented) A computer readable medium storing computer readable instructions that, when executed by a processor, cause a data processing device to perform the steps of:
  - in a first cell, receiving from a base station corresponding to the first cell, a broadcast message communicating multicast session information for a plurality of cells comprising the first cell and a second cell;
  - (ii) tuning to a multicast session in the first cell using the received multicast session information;
  - (iii) when a predetermined condition occurs, tuning to the multicast session in the second cell using the received multicast session information.
- 24. (Original) The computer readable medium of claim 23, wherein, in step (i), the multicast session information comprises a session identifier and a list of channels in which the multicast session is available.
- 25. (Original) The computer readable medium of claim 23, wherein, in step (i), the multicast session information comprises a frequency.

- 26. (Original) The computer readable medium of claim 23, wherein, in step (i), the multicast session information comprises a session title.
- 27. (Original) The computer readable medium of claim 23, wherein steps (ii) and (iii) comprise receiving a digital video broadcast terrestrial (DVB-T) multicast session.
- 28. (Original) The computer readable medium of claim 23, wherein steps (ii) and (iii) comprise receiving a UMTS multicast session.
- 29. (Original) The computer readable medium of claim 23, wherein, in step (i), the multicast session information comprises link-level access parameters corresponding to the first and second cells, and

wherein steps (ii) and (iii) comprise using the link-level access parameters to tune to the multicast session in each cell.

- 30. (Original) The computer readable medium of claim 23, wherein the computer readable instructions further comprise the step of joining an IP multicast group in the first cell.
- 31. (Original) The computer readable medium of claim 23, wherein the computer readable instructions further comprise the step of periodically receiving multicast session announcements while tuned to the multicast session in the first cell.
- 32. (Original) The computer readable medium of claim 23, wherein in step (iii) the predetermined condition comprises a signal strength fading.
- 33. (Original) The computer readable medium of claim 23, wherein in step (iii) the predetermined condition comprises receiving predetermined user input.

- 34. (Original) A method for performing multicast session handover, comprising steps of:
  - (i) tuning to a logical announcement channel;
  - (ii) receiving a session announcement corresponding to a multicast session, the session announcement comprising information that maps link-level access parameters in each of a plurality of cells to the multicast session;
  - (iii) receiving the multicast session in a first cell using the first cell's received linklevel access parameters; and
  - (iv) when reception of the multicast session in the first cell changes from a first signal strength, receiving the multicast session in a second cell using link-level access parameters contained in the session announcement.
- 35. (Original) The method of claim 34, wherein steps (iii) and (v) comprise tuning to a digital video broadcast terrestrial (DVB-T) multicast session.
- 36. (Original) The method of claim 34, wherein steps (iii) and (v) comprise tuning to a UMTS multicast session.
  - 37. (Previously Presented) A mobile terminal, comprising:

a processor, and

memory for storing computer readable instructions that, when executed by the processor, cause the mobile terminal to perform steps of:

- wirelessly receiving from a base station corresponding to a first cell, a broadcast message communicating multicast session information for the first cell and multicast session information for a second cell;
- (ii) wirelessly tuning to a multicast session broadcast by the base station corresponding to the first cell using the received multicast session information for the first cell;

- (iii) when a predetermined condition occurs, wirelessly tuning to a corresponding multicast session broadcast by a base station corresponding to the second cell using the received multicast session information for the second cell.
- 38. (Previously Presented) The mobile terminal of claim 37, wherein, in step (i), each multicast session information comprises a session identifier and a list of channels in which the multicast session is available.
- 39. (Previously Presented) The mobile terminal of claim 37, wherein, in step (i), each multicast session information comprises a frequency.
- 40. (Previously Presented) The mobile terminal of claim 37, wherein, in step (i), each multicast session information comprises a session title.
- 41. (Previously Presented) The mobile terminal of claim 37, wherein steps (ii) and (iii) comprise wirelessly receiving a digital video broadcast terrestrial (DVB-T) multicast session.
- 42. (Previously Presented) The mobile terminal of claim 37, wherein steps (ii) and (iii) comprise wirelessly receiving a UMTS multicast session.
- 43. (Previously Presented) The mobile terminal of claim 37, wherein, in step (i), each multicast session information comprises link-level access parameters corresponding to its respective cell, and

wherein steps (ii) and (iii) comprise using the link-level access parameters to tune to the multicast session in each respective cell.

44. (Previously Presented) The mobile terminal of claim 37, wherein the computer readable instructions further comprise the step of periodically receiving multicast session announcements while tuned to the multicast session in the first cell.

- 45. (Previously Presented) The mobile terminal of claim 37, wherein in step (iii) the predetermined condition comprises a fading of the signal strength of the first cell.
- 46. (Previously Presented) The mobile terminal of claim 37, wherein in step (iii) the predetermined condition comprises receiving predetermined user input.
- 47. (Previously Presented) A method for performing multicast session handover, comprising, prior to determining that a handoff from a first cell to a second cell should be made for a mobile terminal located in the first cell, transmitting from a base station corresponding to the first cell, a broadcast message communicating multicast session information for a plurality of cells comprising the first cell and the second cell.

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> EVIDENCE APPENDIX 37 C.F.R. § 41.37(c)(1)(ix)

None.

RELATED PROCEEDINGS APPENDIX

37 C.F.R. § 41.37(c)(1)(x)

None.